SynLam(TM) Primary Mirror Evaluation, Phase I

Completed Technology Project (2005 - 2005)

Project Introduction

Cornerstone Research Group, Inc. (CRG), has developed sandwich core composite material (SynLam(TM)) and related fabrication technology to address the drawbacks of conventional materials and fabrication processes for space-based mirrors. The resulting technologies will directly address NASA's requirement for advanced, low-cost, high quality large optics fabrication processes for building imaging systems that support the Space Science Enterprise's Structure and Evolution of the Universe Theme. Extending recent CRG advancements in syntactic composites by tailoring the material system to cryogenic applications, the new material will achieve a balance of mass, structural, thermal, and optical properties that dramatically advances the state-of-the-art for space-based mirrors. The new material will also enable mirror fabrication techniques that are significantly faster and cheaper than current practice. Currently available syntactic materials show the potential of this class of composite for application in lightweight mirrors. Integrated development of the new material and new process technology will yield synergy in advancing the state-of-the-art in both areas.

Primary U.S. Work Locations and Key Partners

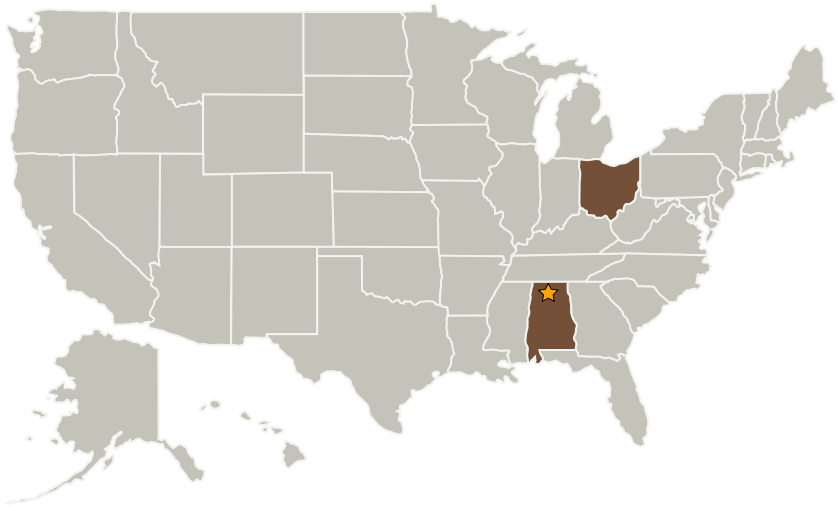

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Table of Contents

Project Introduction 1
Primary U.S. Work Locations and Key Partners 1
Organizational Responsibility 1
Project Management 2
Technology Areas 2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center (MSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Marshall Space Flight Center(MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
Cornerstone Research Group, Inc.	Supporting Organization	Industry	Miamisburg, Ohio

Primary U.S. Work Locations	
Alabama	Ohio

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Stephen D Vining

Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.2 Thermal Control Components and Systems
    - TX14.2.8 Measurement and Control